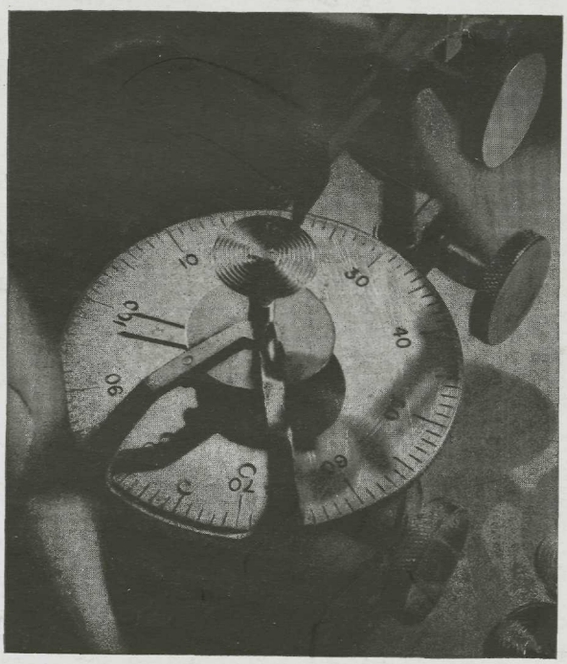
THE OHIO STATE ENGINEER



Vol. XXIV No. 4

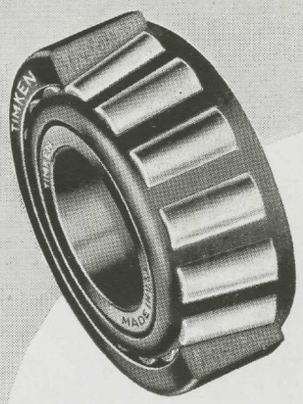
MARCH, 1941

FIFTEEN CENTS

MEMBER OF THE ENGINEERING COLLEGE MAGAZINE ASSOCIATION

OWEN

EVERY GOOD ENGINEER MUST KNOW HIS BEARINGS



get this knowledge now

You will have a lot of bearing problems to solve when you get into the field of practical engineering. Don't wait until you come up against these problems to find out about bearings. Study the subject now.

By acquiring a thorough knowledge of the basic principle, scientific design and application of the TIMKEN Tapered Roller Bearing you will be able to meet any bearing requirement in any kind of machinery—for TIMKEN Bearings not only eliminate friction; they carry all loads—radial, thrust or both together; and hold moving parts in correct and constant alignment.

More TIMKEN Bearings are used in mechanical equipment of all kinds than any other kind of bearing—from modern machine tools where the most exacting precision is demanded, to huge steel rolling mills where terrific loads and shocks must be carried.

Write for a free copy of the Timken Reference Manual —a real bearing text book.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

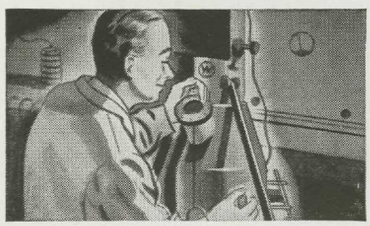
TIMKEN

TAPERED ROLLER BEARINGS

Manufacturers of TIMKEN Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; TIMKEN Alloy Steels and Carbon and Alloy Seamless Tubing; and TIMKEN Rock Bits.

What do you know about Electricity?

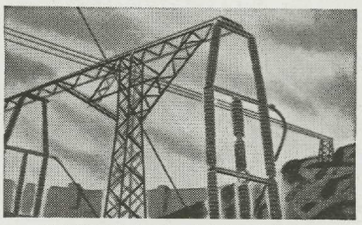
No. 2 of a Series of Modern Engineering Tests!



THE OSCILLOGRAPH

The Westinghouse cathode-ray oscillograph makes written records of electrical events occurring in as short a time as:

1. One second
2. One cycle of a 60 cycle per second wave
3. One-thousandth of a second
4. One-millionth of a second.



LIGHTNING ARRESTERS

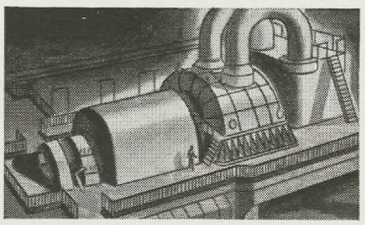
Lightning is a constant threat to transmission lines. Westinghouse has constructed lightning arresters that protect the highest voltage carried, which is:

1. 33,000 volts
2. 66,000 volts
3. 220,000 volts
4. 287,000 volts

DEEP OIL WELL DRILLING

Great depth is being attained with electric rigs using Westinghouse equipment. To date, holes have been drilled as deep as:

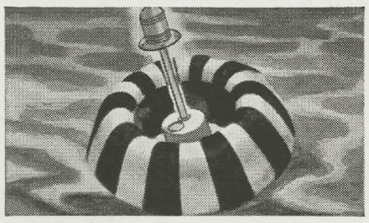
1. 1200 feet
2. 4800 feet
3. Two and one-half miles
4. Six and one-third miles.



STEAM-TURBINE GENERATOR

Installed in Philadelphia is the largest single-shaft steam-turbine generator ever constructed. It was built by Westinghouse and can develop:

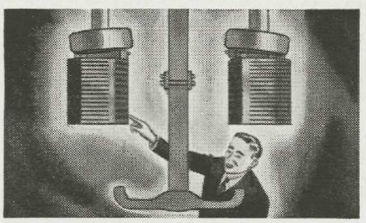
1. 17,500 kw
2. 72,500 kw
3. 165,000 kw
4. 850,000 kw



SEADROME CONTACT LIGHT

The Seadrome Contact Light, developed by Westinghouse to facilitate night landing of seaplanes, is turned on and off by:

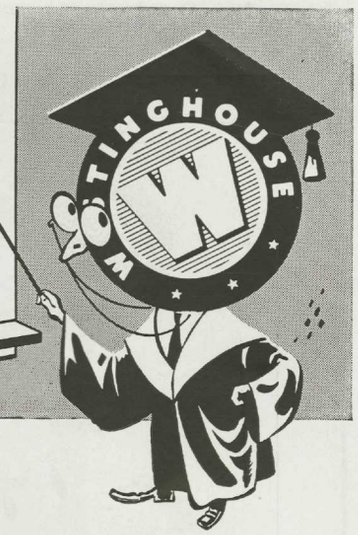
1. A man in a launch
2. An electric eye
3. Radio signals from shore
4. A submerged cable.



DE-ION PRINCIPLE

As pioneered in 1928 by Dr. Joseph Slepian, Westinghouse Research Engineer, the De-ion principle is concerned with:

1. Faster, more efficient extinction of electric arcs
2. A new method of charging for electric power
3. The theory of magnetism
4. Harnessing the power of the atom.



Let's Try It Again!

Regardless of how you came out on the last series of questions, here's another chance for you to see how familiar you are with important developments in the field of electrical engineering.

Optional answers are provided for each of the six questions listed at the left. Your task is to check the correct answer in each instance. To eliminate any peeking, the answers are printed below, upside down.

If you get four out of six correct you'll be doing all right. Five out of six passes you with honors. If you should know all the answers you can give yourself a good pat on the back.

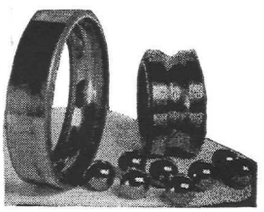
★ ANSWERS ★

1. De-ion Principle ..... Ans. 4.
2. Lightning Arresters ..... Ans. 4.
3. Deep Oil Well Drilling ..... Ans. 3.
4. Steam-Turbine Generator ..... Ans. 3.
5. Seadrome Contact Light ..... Ans. 3.
6. The Oscillograph ..... Ans. 4.

WESTINGHOUSE **Westinghouse** *"The name that means everything in electricity"*

EVERYONE knows this inevitable result of Wear due to friction. Yet . . . the sliding, scuffing contact of countless feet on granite is as nothing in wear potential compared to the contact of metal on metal—in modern machinery, under heavy loads, at high speeds.

During the useful life of an ever increasing number of modern machines, the bearings make millions or even billions of revolutions. And these machines stand up! For friction is practically eliminated in the ball bearing as perfected by New Departure, and Wear is less than in any other type of rolling bearing.

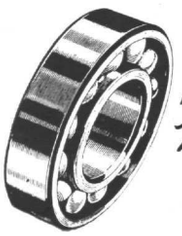


. . . and still going!

In this New Departure ball bearing, which had made 35,000,000 revolutions under load, the original finish was perfect and Wear for all practical purposes was not measurable. Think what that kind of "wear prevention" means in lower maintenance and longer machine life!

ENGINEERING STUDENTS: For interesting brochure, "How Wear Wore Itself Out," write to New Departure, Division General Motors Sales Corporation, Bristol, Conn.

NEW DEPARTURE



BALL BEARINGS

Nothing Rolls Like a Ball

The OHIO STATE ENGINEER

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DONALD E. POSTLEWAITE, Editor IVAN W. SPRAITZAR, Bus. Mgr.

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